

What is claimed is:

1. A structure for use in an electrochemical cell system comprising:
a dry component structure including a plurality of dry components, including an anode and a cathode, one end of the dry component structure having a reservoir of electrolyte concentrate,
wherein liquid is added to the reservoir of electrolyte concentrate and electrolyte is introduced into the dry component structure through an electrolyte flow control structure thereby causing electrochemical reaction between the anode and cathode.
2. The structure as in claim 1, wherein the electrolyte flow control structure comprises tubing configured, dimensioned and positioned to allow fluid to fill to a requisite level in the reservoir prior to being introduced en mass into the dry component structure.
3. The structure as in claim 2, further wherein air is introduced after liquid is added to the requisite level to facilitate fluid transfer from the reservoir to the dry component structure.
4. The structure as in claim 1, wherein the electrolyte flow control structure comprises an opening between the reservoir and the dry component structure and a plug at a top portion of the reservoir, wherein the plug is formed of a material capable of allowing air to exit the reservoir and capable of preventing fluid from passing therethrough.
5. The structure as in claim 1, wherein the electrolyte flow control structure comprises a controllable one-way valve.

6. The structure as in claim 1, wherein the electrolyte flow control structure comprises an upside down J-shaped tube, wherein the J-shaped tube provides fluid communication between interior of electrolyte reservoir and dry component structure, whereby electrolyte will not be introduced into the dry component structure until liquid in the tube reaches a requisite height in reservoir.
7. The structure as in claim 1, wherein the electrolyte flow control structure comprises an opening between the reservoir and dry component structure and a conduit extending from the reservoir to ambient, wherein electrolyte fluid from reservoir fills the dry components and air is released from the reservoir.
8. The structure as in claim 1, wherein the electrolyte flow control structure comprises an opening covered with a separator.
9. The structure as in claim 8, wherein separator is fabricated of nylon.
10. The structure as in claim 9, wherein the nylon has a porosity that delays liquid introduction into dry cell, whereby electrolyte is allowed to at least partially mix within the reservoir, before entering dry component structure.
11. A structure for use in an electrochemical cell system comprising:
an assembly including a plurality of dry component portions, each dry component portion including an anode and a cathode, one end of the dry component structure having a reservoir of electrolyte concentrate.
12. The structure as in claim 11, wherein liquid is introduced via an inlet; the inlet in fluid communication with a distribution area, the reservoir including a region associated with each dry component portion.

13. The structure as in claim 1, wherein each dry component structure includes an anode current collector having opposing sides, an anode card on each side of the anode current collector, and a cathode portion associated with each anode card.
14. The structure as in claim 1, wherein each dry component structure includes an anode current collector having opposing sides, an anode frame configured for holding anode material in electrical contact with the anode current collector, and a cathode portion associated with the anode material.
15. The structure as in claim 14, wherein the anode frame is a monolithic structure having a central support portion and a peripheral portion, further wherein the anode current collector is assembled in the anode frame and secured with a separate frame portion that mechanically cooperates with the central support portion.
16. The structure as in claim 15, wherein the assembled structure includes at least one opening between the separate frame portion and the central support portion, the opening facilitating filling of anode material.
17. The structure as in claim 15, wherein the assembled structure includes at least one opening between the separate frame portion and the central support portion, the opening facilitating electrolyte access.
18. The structure as in claim 14, the anode frame having an opening proximate the reservoir, the opening facilitating filling of anode material.
19. The structure as in claim 14, the anode frame having an opening proximate the reservoir, the opening facilitating electrolyte access.

20. A kit for providing energy comprising a structure as in claim 1 or 11, further comprising a container having a nozzle configured to introduce water into the dry component portions.
21. A system for providing energy comprising a structure as in claim 1 or 11, a water source, and a control system for determining when water should be introduced into the dry component portions.
22. A portable power supply system comprising a housing for a reserve battery as in claim 1 or 11 and a reusable housing containing a DC to AC converter system, DC to DC converter system, or both.
23. The portable power supply system as in claim 22, wherein the housing for the reserve battery includes louvers for airflow.
24. The portable power supply system as in claim 22, wherein the housing for the reserve battery includes controllable louvers for airflow when the system is operated.
25. The portable power supply system as in claim 22, further comprising a fan integrated therein.
26. The portable power supply system as in claim 25, wherein the fan is operated when the system is operated.
27. The portable power supply system as in claim 25, wherein the fan is operably coupled to a temperature sensor for operation when the temperature sensor exceeds a desired level.
28. A method of manufacturing a metal air cell comprising:

forming an assembly by providing an anode current collector, surrounding the anode current collector with anode, and placing a cathode proximate to and in electrical isolation from the anode;
placing the assembly in a mold with a spacer positioned to cover an air access portion of the cathode and leaving exposed at least one edge of the cathode; and
casting a curable material in the mold,
whereby the curable material cures within the edge of the cathode.

29. A method of manufacturing a metal air reserve battery comprising:

forming an assembly by providing an anode current collector, surrounding the anode current collector with anode, and placing a cathode proximate to and in electrical isolation from the anode;
placing the assembly in a mold with a spacer positioned to cover an air access portion of the cathode and leaving exposed at least one edge of the cathode; and
casting a curable material in the mold,
whereby the curable material cures within the edge of the cathode.

30. The method as in claim 29, wherein a reservoir is provided in the mold at a distal end of the assembly prior to casting.

31. The method as in claim 29, wherein the curable material comprises urethane resin.

32. The method as in claim 29, wherein the curable material is allowed to polymerize in situ within the pores of the cathode to form a tight seal.

33. The method as in claim 29, wherein the curable material cures at low temperature and low pressure.

34. The method as in claim 29, wherein the curable material cures at ambient temperature.
35. The method as in claim 29, wherein the curable material cures at ambient pressure.
36. The method as in claim 29, wherein the curable material resists shrinkage.